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SURFACE TRANSPORTATION BOARD

STB Ex Parte No. 558 (Sub-No. 1)

RAILROAD COST OF CAPITAL — 1997

Decided: July 9, 1998

Upon review of the evidence tendered in this proceeding, the Board finds that in 1997, the railroad industry had: (1) a current cost of debt of 7.2%; (2) a current cost of common equity capital of 13.8%; (3) a cost of preferred equity capital of 6.1%; (4) a capital structure mix of 29.67% debt, 70.28% common equity, and 0.05% preferred equity capital; and (5) a composite cost of capital of 11.8%.

BY THE BOARD:

One of the Surface Transportation Board's regulatory responsibilities is the annual determination of the railroad industry's cost of capital. This determination is one component used in evaluating the adequacy of railroad revenues each year under the procedures and standards mandated by Congress in the Railroad Revitalization and Regulatory Reform Act of 1976) (4R Act) and promulgated in *Standards for Railroad Revenue Adequacy*, 364 I.C.C. 803 (1981), revised, 3 I.C.C.2d 261 (1986). This finding may also be used in other regulatory proceedings, including, but not necessarily limited to, those involving the prescription of maximum reasonable rate levels and proposed abandonments of rail lines.

The most recent determination of the railroad industry's cost of capital was for the year 1996, in *Railroad Cost of Capital - 1996*, STB Ex Parte No. 558 (STB served July 16, 1997) (*Cost 96*). The instant proceeding, instituted in *Railroad Cost of Capital — 1997*, STB Ex Parte No. 558 (Sub-No. 1) (STB served Dec. 17, 1997), updates the railroad industry cost of capital for the year 1997.

Evidence as to the computation of this year's cost of capital was furnished by the Association of American Railroads (AAR). The AAR concluded that the composite cost of capital for the railroad industry for 1997 was 11.8%, slightly lower than the 1997 cost of capital rate of 11.9%.<sup>1</sup>

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<sup>1</sup> Although it did not submit any evidence or calculations itself, in a pleading filed on April 10, 1998, the Western Coal Traffic League (WCTL) asserted that the Board's procedure for calculating the cost of capital produces a figure that is too high given current economic conditions, the financial condition of the railroads, and the regulatory purposes of the cost of capital calculation. This  
(continued...)

Consistent with previous cost of capital proceedings, the AAR determined the overall railroad industry cost of capital rate using a "composite railroad" comprised of Class I carriers controlled by selected major railroad holding companies. The selection of these companies is based on criteria developed in *Railroad Cost of Capital — 1984*, 1 I.C.C.2d 989 (1985).<sup>2</sup> The following companies which met these criteria are included: Burlington Northern Santa Fe Corporation (BNSF), CSX Corporation (CSX), Illinois Central Corporation (IC), Kansas City Southern Corporation (KCS), Norfolk Southern Corporation (NSC), and the Union Pacific Corporation (UPC).<sup>3</sup> These companies account for over 86% of total operating revenues and over 87% of railroad assets of all Class I railroads.<sup>4</sup>

As discussed below, we have examined the procedures used by the AAR to determine the following for 1997: (1) the current cost of debt capital; (2) the cost of common equity capital; (3) the cost of preferred equity capital; (4) the capital structure mix; and (5) the composite railroad industry cost of capital.

#### DEBT CAPITAL

The AAR developed its 1997 current cost of debt using bond price data from Standard & Poor's Corporation *Bond Guide*. The AAR's cost of debt is based on the market value yields of the

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<sup>1</sup>(...continued)

proceeding, however, focuses on the various components that make up the cost of capital and the underlying techniques and methodologies used to update those components to the current year's level. Because WCTL introduced no specific evidence concerning the computation of the cost of capital, the balance of this decision concentrates on the evidence submitted by the AAR.

<sup>2</sup> These criteria are as follows: (1) the company is listed on either the New York or American Stock Exchange; (2) the company paid dividends throughout the year; (3) the company's rail assets are greater than 50% of its total assets; and (4) the company has a debt rating of at least BBB (Standard & Poor's) and Baa (Moody's).

<sup>3</sup> With the exception of Consolidated Rail Corporation (Conrail), these are the same companies used in *Cost 96*. Conrail's stock was purchased by CSX and NSC in the second quarter of 1997. Conrail, therefore, did not have stock traded throughout the year. Because Conrail did not meet the criteria for inclusion in the study frame, its stock prices, dividends, and growth prior to its stock being acquired by CSX and NSC are not included in the determination of the cost of equity. Its debt is included for the last eight months to account for the fact that CSX and NSC effectively assumed Conrail's debt liability for that time period during 1997.

<sup>4</sup> In addition to Conrail, two Class I railroads (Grand Trunk Western, owned by the Canadian National Railway; and Soo Line, owned by Canadian Pacific) are not included in the composite group.

major forms of long-term debt instruments for the sample railroad holding companies listed above.<sup>5</sup> These debt instruments include: (1) bonds, notes, and debentures (bonds); (2) equipment trust certificates (ETCs); and (3) conditional sales agreements (CSAs). The yields of these debt instruments are weighted based on their market value.

*Cost of Bonds, Notes, and Debentures (Bonds)*

The AAR used data contained in Standard & Poor's *Bond Guide* for the current cost of bonds, based on monthly prices and yields during 1997, for all issues (a total of 82) that were publicly traded during the year.<sup>6</sup> Because NSC and CSX issued new debt to cover the acquisition costs of Conrail, the AAR prorated this new debt over an eight month period. The AAR prorated existing Conrail debt over the same period. To determine the current (1997) market value of bonds, the AAR used 80 traded bonds and 61 additional bonds that were outstanding but not traded during 1997.<sup>7</sup> Continuing the procedure in effect since 1988, the AAR based the market value on monthly prices for all traded bonds and the face or par value (\$1,000) for all bonds not traded during the year. The AAR computed the total market value of all outstanding bonds to be \$18,504.3 million. Based on the yields for the traded bonds, the AAR calculated the weighted average 1997 yield for all bond, notes, and debentures to be 7.18%.

We have made adjustments to some of the AAR's calculations. While the AAR correctly prorated the CSX, NSC, and Conrail issues over an eight month time period, it failed to prorate four new issues of BNSF. Our calculations make these prorations. Further, as previously noted, the AAR omitted four NSC issues in its computation of total market value of bonds, notes, and debentures. We have included these issues in our calculations. Finally, the AAR weighted the current cost of bonds to both traded and untraded issues. Our calculations weight the current cost of bonds using traded issues only. This is the same procedure which has been used in previous cost of capital determinations. We have recomputed the dollar value of bonds to be somewhat lower than

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<sup>5</sup> As noted earlier, Conrail debt is included for only the last eight months of 1997, to account for its assumption by CSX and NSC.

<sup>6</sup> The AAR data include 21 new bonds issued by the sample railroad holding companies during 1997 and 61 bonds issued prior to 1997 that were publicly traded during the year.

<sup>7</sup> While the AAR provided data for 82 traded issues, it inadvertently omitted two NSC medium term notes from its final calculations. Similarly, the AAR provided data for 63 untraded issues but omitted two NSC issues with a value of \$1.5 million.

the AAR's figure (\$18,271.9 million).<sup>8</sup> We also have recalculated the weighted average yield for bonds, notes, and debentures to be 7.17%, slightly lower than the AAR's figure.<sup>9</sup>

*Cost of Equipment Trust Certificates (ETCs)*

ETCs are not actively traded on secondary markets. Therefore, their costs must be estimated by comparing them to the yields of other debt securities that are actively traded. Following the practice in previous cost of capital proceedings, the AAR used government securities with maturities similar to these ETCs as surrogates for determining yields. After determining the 1997 yields for these government securities, the AAR added basis points<sup>10</sup> to these yields to compensate for the additional risks associated with the ETCs.

No new ETCs were issued during 1997. There were 64 ETCs issued prior to 1997 that were outstanding during the year. All of these ETCs were rated A by Standard and Poor's.<sup>11</sup> Because no new ETCs were issued in 1997, the AAR determined the yield spread for A rated ETCs by starting with the yield spread for a new A rated Conditional Sales Agreement (CSA) issued by CSX in 1997. The yield spread for this CSA was determined to be 55 basis points. Using historical trends that show ETC basis points to be approximately 40% of CSA basis points, the AAR determined that the number of basis points to apply to A rated ETCs was 22. Using the yield spreads, the AAR calculated the weighted average cost of ETCs to be 6.02% and their market value to be \$1,797.7 million for 1997.<sup>12</sup>

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<sup>8</sup> Our recalculation is based on the two changes we made to the AAR's submission noted above. First, we prorated the four new BNSF debt instruments issued during the year. This lowered the value of BNSF bonds from the AAR's figure of \$3,256.4 million to \$2,816.8 million. Second, we adjusted the market value of NSC debt up by \$207.2 (from \$3,556.4 million to \$3,763.6 million) to account for AAR's omission of four bonds in its total. Our adjustments addressing these issues, as well as dollar values by company, are shown in Table 1 in the Appendix.

<sup>9</sup> These calculations are shown in Table 2 in the Appendix.

<sup>10</sup> A basis point equals 1/100th of a percentage point.

<sup>11</sup> In previous years, NSC ETCs were rated AAA and Conrail ETCs were rated AA. Standard and Poor's lowered the ratings for these ETCs to A. All other Class I railroad ETCs were previously A rated and remained so for 1997.

<sup>12</sup> The AAR has approximated the market values of ETCs using the same procedures used in previous cost of capital determinations. These procedures are based on the use of standard security industry formulas found in *Standard Security Calculation Methods*.

We have analyzed the ETC cost and market value evidence supplied by the AAR and find it to be acceptable. A summary of the ETC computations is shown in Table 3 in the Appendix.

#### *Cost of Conditional Sales Agreements (CSAs)*

CSAs represent a small fraction (less than 1%) of total railroad debt. The cost of CSAs, however, can be estimated. As noted above, one new A rated CSA was issued during 1997, by CSX, with a yield spread of 55 basis points.<sup>13</sup> Using this yield spread, the AAR determined the weighted average cost of CSAs for 1997 to be 6.44%. The AAR determined the market value for CSAs to be \$204.9 million.<sup>14</sup> We have examined the cost and market value of the CSAs using the AAR's data, and we agree with the AAR's calculations. The results of our computations are shown in Table 4 in the Appendix.

#### *Miscellaneous Debt and Capitalized Leases*

As in previous cost of capital determinations, the AAR excluded the costs of capitalized leases and miscellaneous debt in its computation of the overall current cost of debt because these costs are not directly observable in the open market. Also in keeping with past practice, the AAR included the book value of leases and commercial paper in the overall market value of debt, which is used to determine the railroads' capital structure mix. The AAR noted that the cost of capitalized leases is generally higher than that of other debt, but it did not make any upward correction for the cost of those leases. The AAR determined that the market value for the capitalized leases and miscellaneous debt was \$4,122.5 million for 1997. We have examined the AAR's work papers and other evidence and have adjusted the figure to \$4,064.5 million.<sup>15</sup> Table 5 in the appendix shows our recalculations for capitalized leases and miscellaneous debt.

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<sup>13</sup> The yield for this new CSA was 6.64% in 1997. A comparable Government bond with the same maturity had a yield of 6.09%. The difference is 55 basis points (6.64 minus 6.09).

<sup>14</sup> The AAR approximated the market values of CSAs using the same procedures used in previous cost of capital determinations. These procedures are based on the use of standard security industry formulas found in *Standard Security Calculation Methods*.

<sup>15</sup> Our adjustment excludes a Conrail capitalized lease with a current maturity, which in our view is not long-term debt.

The AAR determined that the total market value for all debt during 1997 was \$24,629.4 million. Due to the various adjustments discussed above, we have recomputed the total market value for all railroad debt in 1997 to be \$24,339.5 million.<sup>16</sup>

#### *Flotation Costs of Debt*

As in past cost of capital decisions, the AAR's calculation of the current cost of debt included a flotation cost factor consisting of costs associated with the issuance of new debt such as underwriters' fees, advertising costs, and legal fees. The AAR determined that flotation costs for debt equaled 0.157%. We have reviewed the AAR's calculations concerning flotation costs and find that the cost factors developed for the various components of debt are reasonable.<sup>17</sup>

#### *Overall Current Cost of Debt*

The AAR concluded that the railroads' current cost of debt for 1997 was 7.22%. We have reviewed the AAR's evidence relative to the current cost of debt and concur with that figure.<sup>18</sup> Our calculations are shown in Table 8 in the Appendix.

### COMMON EQUITY CAPITAL

In previous cost of capital decisions, we have determined the cost of common equity using the Discounted Cash Flow (DCF) method. The AAR submitted evidence as to the current cost of equity capital using this procedure. This evidence is virtually identical to that furnished by the AAR in previous cost of capital proceedings.

#### *Market Value of Common Equity*

The AAR calculated the 1997 market value of common equity by multiplying the number of shares outstanding by the daily closing price for each trading day during the year for each of the sample railroads. The AAR determined that the average market value for the year 1997 was

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<sup>16</sup> See Table 6 in the Appendix for a complete breakdown of the market value of debt.

<sup>17</sup> See Table 7 in the Appendix for these calculations. The AAR's flotation cost factors are based on data developed by Salomon Brothers for ETCs and studies by the Securities and Exchange Commission concerning flotation costs for issuances of new bonds. The estimated flotation cost for CSAs is the same as that used in prior proceedings.

<sup>18</sup> This is slightly lower than the 1996 cost of debt (7.35%).

\$57,650.5 million. We have reviewed the AAR's calculations and have determined that they correctly calculate the average market value of common equity. Table 9 in the Appendix shows our calculations of the average market value of common equity and relative weights for each railroad.

*Discounted Cash Flow (DCF) Method*

The DCF method of determining the cost of common equity is used by the majority of state regulatory agencies and has been used by the Interstate Commerce Commission (ICC) and the Board for many years. Under the DCF method, the cost of common equity is the discount rate that makes the present value of expected returns from holding a stock (dividends and price appreciation) equal to the current market value of that stock. The DCF method considers two variables — dividend yield and expected growth in earnings per share.<sup>19</sup>

*Dividend Yield*

The AAR computed the 1997 average dividend yield for the composite group of railroads using the same method that it employed in past cost of capital determinations, *i.e.*, weighting each company's monthly dividend yield on the basis of its prorated share of the total market value for the composite for each day during that month based on daily closing prices. The AAR developed a composite dividend yield of 2.11 for 1997. We have determined that this number was correctly computed. This figure is 0.25 of a percentage point lower than the 1996 dividend yield (2.36%). Calculations of the dividend yield are shown in Table 10 in the Appendix.

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<sup>19</sup> In *Railroad Cost of Capital - 1982*, 367 I.C.C. 662 (1983) (*Cost 82*), the ICC developed the following DCF formula:

$$K = [D_{(O)} \times (1 + g/2)/P_{(O)}] + g, \text{ where:}$$

- K = cost of common equity
- D<sub>(O)</sub> = annual dividend
- P<sub>(O)</sub> = current stock price
- g = expected growth rate

This formula assumes that, at the start of the year, an investor would require a return on equity (K) equal to  $[D_{(O)}/P_{(O)}] + g$ , where  $D_{(O)}/P_{(O)}$  represents the average dividend yield expected for the year and g represents an estimate of the expected growth rate. At the end of the year, the investor would be concerned with projected returns for the following year and would require a K equal to  $[D_{(O)} \times (1+g)/P_{(O)}] + g$ , which would allow for dividend growth for the following year. The average of these two formulas produces this DCF formula.

### *Growth Rate*

The AAR used the growth rate forecasts published monthly by the Institutional Brokers Estimate System (IBES) throughout 1997.<sup>20</sup> The AAR developed growth rates for each of the railroads that make up the composite by averaging the IBES forecasts for that railroad. It then weighted each railroad's growth rate according to its prorated share of the market value of the total railroad composite to arrive at a single growth rate. The AAR concluded that this composite growth rate was 11.53%, based on a truncated average of the forecasts.<sup>21</sup> Our calculations agree with those made by the AAR. The 11.53% growth rate is 0.16 of a percentage point higher than the 10.37% growth rate developed in the 1996 cost of capital decision. The growth rate calculations are shown in Tables 11 (truncated) and 12 (nontruncated) of the Appendix.

### *Flotation Costs*

As with the issuance of new debt instruments, flotation costs are also incurred with the issuance of new equity securities. In *Adequacy of Railroad Revenue (1979 Determination)*, 363 I.C.C. 344, 352 (1979), the ICC concluded that flotation costs for equity capital should not be considered unless new equity had, in fact, been issued. This conclusion has been reaffirmed in subsequent cost of capital decisions. Because no railroad issued any new common equity capital during 1997, no flotation cost factor has been included in the DCF formula.

### *Conclusion - Cost of Common Equity Capital*

Using a truncated average IBES growth rate ( $g$ ) of 11.53%, a dividend yield ( $D_{(O)}/P_{(O)}$ ) of 2.11%, and the Board's DCF formula, the AAR determined the cost of common equity for 1997 to be 13.76%. We have computed the same figure, 13.8%. This figure is 0.1 of a percentage point lower than the cost of common equity for 1996 (13.9%).<sup>22</sup>

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<sup>20</sup> As has been the case since the findings in *Railroad Cost of Capital - 1987*, 4 I.C.C.2d 621 (1988), we have relied on the use of consensus analyst 5-year earnings per-share growth rate data published by IBES to develop the growth rate estimates used in the DCF approach. IBES data include growth rate estimates from essentially all major brokerage firms.

<sup>21</sup> IBES provides a simple average, the highest forecast, and the lowest forecast for each railroad. The AAR excluded the highest and lowest forecasts to arrive at the truncated average. This is the same procedure that has been followed in previous cost of capital determinations.

<sup>22</sup> See Table 13 in the Appendix for our calculation of the cost of equity.



## PREFERRED EQUITY

Preferred equity has some of the characteristics of debt and some of the characteristics of equity. Essentially, preferred issues are like common stocks in that they have no maturity dates and represent ownership in the company (usually with no voting rights attached). They are like debt in that they usually have fixed dividend payments (akin to interest payments). The railroads' total market value weight of preferred stock relative to common stock and debt has been declining over the past few years and currently represents a minuscule portion (0.05%) of the total capitalization for the composite group.

The AAR examined the two preferred stock issues of the sample railroads,<sup>23</sup> and determined their cost using the dividend yield method (dividends divided by market price). The AAR computed the market value of preferred stock by multiplying the average quarterly price for each issue by the number of shares outstanding during the quarter. This is the same procedure used in previous cost-of-capital determinations. The AAR computed the market value and current cost of preferred equity during 1997 to be \$43.0 million, and 6.12%, respectively.<sup>24</sup> This figure is significantly higher than the 2.34% figure for 1996, again due to the elimination of the Conrail issue with its very low yield.

We have examined the AAR's evidence and have determined that its figures are correct. Table 14 in the Appendix contains the calculations of the cost of preferred equity.

## CAPITAL STRUCTURE MIX

In *Cost 82*, the ICC decided to use a market-value based capital structure mix to determine the cost of capital. This is the twelfth proceeding that includes the market value of preferred equity as well as the market value of debt and common equity. Our computations of market values and the capital structure mix for 1997 are shown in Table 15 in the Appendix.

We have determined that the market value of bonds, preferred stock, and common equity for 1997 was \$82,033.0 million. This figure is substantially higher than the market value for 1996 (\$76,186.4 million).<sup>25</sup> The percentage share of common equity declined from 70.7% in 1996 to

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<sup>23</sup> The two railroads with preferred stock are KCS and NSC. Prior to 1997, over 95% of the total market value of preferred stock for the industry was attributable to a Conrail issue. This issue no longer exists as a result of the acquisition of all Conrail stock by CSX and NSC.

<sup>24</sup> These are substantially different from the \$991 million market value and 2.34% cost of equity for 1996, due to the elimination of the Conrail issue..

<sup>25</sup> The increase in market value is the result of new debt being assumed by several railroads (primarily by CSX and NSC in connection with the Conrail acquisition) and an increase in stock  
(continued...)

70.28% in 1997. The percentage share of debt increased from 28.0% in 1996 to 29.67% in 1997. The percentage share of preferred equity decreased from 1.3% in 1996 to 0.05% in 1997.

### COMPOSITE COST OF CAPITAL

Based on the evidence furnished in the record, and our adjustments to that evidence discussed above, we conclude that the 1997 composite cost of capital for the railroad industry, as set forth in Table 16 in the Appendix, was 11.8%. The procedure used by the AAR to develop the composite cost of capital is consistent with the Statement of Principle established by the Railroad Accounting Principles Board: "Cost of capital shall be a weighted average computed using proportions of debt and equity as determined by their market values and current market rates."<sup>26</sup> The 1997 cost of capital is 0.1 percentage point lower than the 1996 cost of capital (11.9%).

### CONCLUSIONS

*We find that for 1997:*

1. The current cost of railroad debt equals 7.2%.
2. The cost of common equity equals 13.8%.
3. The cost of preferred equity equals 6.1%.
4. The capital structure mix of the railroads equals 29.67% debt, 70.28% common equity, and 0.05% preferred equity.
5. The composite railroad industry cost of capital equals 11.8%.

### Environmental and Energy Considerations

We conclude that this action will not significantly affect either the quality of the human environment or the conservation of energy resources.

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<sup>25</sup>(...continued)  
market prices (almost \$4 billion) resulting mainly from the continued bull market during 1997.

<sup>26</sup> Railroad Accounting Principles Board *Final Report*, Vol. 1, (1987).

Regulatory Flexibility Analysis

Pursuant to 5 U.S.C. 605(b), we conclude that our action in this proceeding will not have a significant economic impact on a substantial number of small entities. The purpose and effect of the action are merely to update the annual railroad industry cost of capital finding. No new reporting or other regulatory requirements are imposed, directly or indirectly, on small entities.

*It is Ordered:*

1. This decision is effective on July 9, 1998.
2. This proceeding is discontinued.

By the Board, Chairman Morgan and Vice Chairman Owen.

Vernon A. Williams  
Secretary

**APPENDIX**  
**Table 1**  
**Traded & Untraded Bonds / Market Value By Company**

<b>Railroad</b>	<b>When Issued</b>	<b>Number</b>	<b>Market Value (\$ in Millions)</b>	<b>% Market Value to All Bonds</b>
BNSF	Traded (Old Issues)	20	\$2,285.8	81.1%
	Traded (New Issues in 1997) <sup>1</sup>	4	238.5	8.5%
	Untraded	7	292.5	10.4%
	Total	31	\$2,816.8	
Conrail <sup>2</sup>	Traded (Old Issues)	3	\$813.6	96.8%
	Untraded	4	26.7	3.2%
	Total	7	\$840.3	
CSX	Traded (Old Issues)	8	\$1,152.6	23.5%
	Traded (New Issues in 1997) <sup>3</sup>	8	1,675.0	34.2%
	Untraded	11	2,076.2	42.3%
	Total	27	\$4,903.8	
IC	Traded (Old Issues)	2	\$204.2	35.7%
	Untraded	7	367.3	64.3%
	Total	9	\$571.5	
KCS	Traded (Old Issues)	4	\$402.9	55.2%
	Traded (New Issues in 1997)	1	6.1	0.8%
	Untraded	3	321.6	44.0%
	Total	8	\$730.6	
NSC	Traded (Old Issues)	6	\$769.1	20.4%
	Traded (New Issues in 1997) <sup>4</sup>	8	2,993.0	79.5%
	Untraded	2	1.5	0.1%
	Total <sup>5</sup>	16	\$3,763.6	
UPC	Traded (Old Issues)	18	\$3,391.3	73.0%
	Untraded	29	1,254.0	27.0%
	Total	47	\$4,645.3	
Composite	Traded (Old Issues)	61	\$9,019.5	49.4%
	Traded (New Issues in 1997)	21	4,912.6	26.9%
	Untraded	63	4,339.8	23.7%
	Total	145	\$18,271.9	

Footnotes are on the following page.

Footnotes to Table 1

<sup>1</sup> The value shown for the 4 new BNSF issues is prorated based on the number of months each bond was in circulation (ranging from 1 to 6 months). The AAR computed the value of these bonds to be \$678.1 million, and did not make a pro rata adjustment.

<sup>2</sup> The values shown for Conrail bonds are prorated to 8 months, or 67%, of the market value of these bonds to take into account the fact that CSX and NS assumed debt obligations for Conrail for 8 months of 1997. This agrees with the AAR’s computation which did the same thing. Because Conrail is not a study frame carrier in 1997, the value of its bonds prior to the assumption of its debt obligations is excluded.

<sup>3</sup> The value shown for the 8 new CSX issues is prorated on an 8 month or 67% basis, representing the time the bonds have been in circulation. The nonprorated value is \$2,500 million. The AAR performed a similar proration, which produced the same results.

<sup>4</sup> The value shown for the 8 new NSC issues is prorated on an 8 month or 67% basis, representing the time the bonds have been in circulation. The nonprorated value is \$4,467.2 million. The AAR performed a similar proration, which produced the same results.

<sup>5</sup> The total for the NSC includes 2 traded bonds with a current value of \$205.7 million and 2 untraded bonds with a value of \$1.5 million, which were included in the AAR’s work papers but which were inadvertently omitted by the AAR in its calculation of the total NSC bond values.

**Table 2**  
**Calculation of Value and Cost of Bonds, Notes, & Debentures**

Railroad	Number of Traded Issues	Market Value Traded Issues (\$Millions)	Current Cost	Weighted Cost
BNSF	24	\$2,524.3	7.18%	1.30%
Conrail	3	813.6	7.54%	0.44%
CSX	16	2,827.6	7.38%	1.50%
IC	2	204.2	6.89%	0.10%
KCS	5	409.0	7.26%	0.21%
NSC	14	3,762.1	6.94%	1.87%
UPC	18	3,391.3	7.17%	1.75%
Composite	82	\$13,932.1		7.17%

Table 3  
Calculation of Value and Cost of Equipment Trust Certificates

Railroad	No. of Issues	Market Value (\$000)	Yield %	Weighted \$ Yield (\$000)
BNSF	13	\$449,998	6.024%	\$27,107.9
Conrail <sup>1</sup>	3	93,404	6.027%	5,629.5
CSX	16	399,092	6.024%	24,041.3
IC	0	0	0.000%	0.0
KCS	4	92,649	6.011%	5,569.1
NSC	18	373,372	5.998%	22,394.9
UPC <sup>2</sup>	10	389,203	6.023%	23,442
Composite	64	\$1,797,718	6.018%	\$108,184.6
<p><sup>1</sup> The values shown for Conrail ETCs are prorated to 8 months, or 67%, of the market value of these bonds to take into account the fact that CSX and NS assumed debt obligations for Conrail for 8 months of 1997. This agrees with the AAR's computation, which did the same thing. Because Conrail is not a study frame carrier in 1997, the value of its ETCs prior to the assumption of its debt obligations is excluded.</p> <p><sup>2</sup> The AAR separately computed values for 2 ETCs issued by Southern Pacific, which is now part of UPC. The values in the above table combine Southern Pacific and UPC together as UPC. The total for UPC agrees with the AAR's separate Union Pacific and Southern Pacific numbers.</p>				

Table 4  
Calculation of Value and Cost of Conditional Sales Agreements

Railroad	Number of Issues	Market Value (\$000)	Current Cost	Weighted Cost
CSX (Old Issue)	1	\$791.4	6.277%	0.02%
CSX (New in 1997)	1	71,653.4	6.644%	2.32%
UPC <sup>1</sup>	6	132,489.2	6.327%	4.09%
Composite	8	\$204,934.0		6.44%

<sup>1</sup>The 6 issues for the Union Pacific are shown as for the Southern Pacific in the AAR's evidence.

Table 5

Calculation of Value of Capitalized Leases & Miscellaneous Debt

Railroad	Capitalized Leases (\$000)	Miscellaneous Debt (\$000)	Total Other Debt (\$000)
BNSF	\$695,186	\$878,256	\$1,573,442
Conrail <sup>1</sup>	253,528	85,390	338,918
CSX	105,232	225,974	331,206
IC	0	0	0
KCS	4,743	0	4,743
NSC <sup>2</sup>	227,229	17,905	245,134
UPC	1,242,076	329,024	1,571,100
Composite	\$2,527,994	\$1,536,549	\$4,064,543
<p><sup>1</sup>The Conrail debt is prorated to 8 months, or 67%, of its book value to take into account the fact that CSX and NS assumed debt obligations for Conrail for 8 months of 1997. While the AAR's also prorated Conrail debt, it failed to exclude \$86.6 million (non prorated basis) of capital leases that had a current maturity during 1997. Because Conrail is not a study frame carrier in 1997, the value of its capitalized leases and miscellaneous debt prior to the assumption of its debt obligations is excluded.</p> <p><sup>2</sup>The AAR listed \$17.905 million of NS Yen deposits as capitalized leases. We include them as miscellaneous debt. The total, \$245.134 million is the same for both AAR and our calculations.</p>			

Table 6  
Calculation of 1997 Market Value of Debt

Type of Debt	Market Value of Debt (000)	Percentage of Total Market Value (Excluding Miscellaneous Debt)
Bonds, Notes, & Debentures	\$18,271.9	90.12%
ETCs	1,797.7	8.87%
CSAs	204.9	1.01%
Subtotal	20,275	100.00%
Capitalized Leases/Miscellaneous Debt	4064.5	NA
Total Market Value of Debt	\$24,339.5	NA

Table 7

Calculation of Flotation Cost For Debt

Type of Debt	Market Weight (Excludes Miscellaneous Debt)	Flotation Cost	Weighted Average Flotation Cost
Bonds, Notes, & Debentures	90.12%	0.16%	0.144%
ETCs	8.87%	0.13%	0.012%
CSAs	1.01%	0.13%	0.001%
Total	100.00%		0.157%

Table 8  
Calculation of 1997 Cost of Debt

Type of Debt	Percentage of Total Market Value (Excludes Miscellaneous Debt)	Debt Cost	Weighted Debt Cost (Excluding Miscellaneous Debt)
Bonds, Notes, & Debentures	90.12%	7.17%	6.46%
ETCs	8.87%	6.02%	0.53%
CSAs	1.01%	6.44%	0.07%
Subtotal	100.00%	-	7.06%
Flotation Cost			0.16%
Weighted Average Cost of Debt	-	-	7.22%



**Table 9**  
**Calculation of Market Value and Weights of Common Equity**

Railroad	Average Market Value (000)	Average Market Weight
BNSF	\$13,742,487.3	23.84%
CSX	11,463,572.0	19.88%
IC	2,138,156.4	3.71%
KCS	2,477,649.7	4.30%
NSC	12,069,682.9	20.94%
UPC	15,758,976.5	27.33%
COMPOSITE	\$57,650,524.8	100.00%

**Table 10**  
**Calculation of Dividend Yields for Common Equity**

Railroad	Average Weight In Composite	Dividend Yield	Weighted Dividend Yield
BNSF	23.84%	1.36%	0.32%
CSX	19.88%	2.02%	0.40%
IC	3.71%	2.65%	0.10%
KCS	4.30%	0.64%	0.03%
NSC	20.94%	2.49%	0.52%
UPC	27.33%	2.71%	0.74%
COMPOSITE	100.00%		2.11%

Table 11  
Calculation of Truncated Growth Rates

Railroad	Average Weight In Composite	Truncated Average Growth Rate	Contribution To Truncated Average Growth Rate
BNSF	23.84%	12.76 %	3.04%
CSX	19.88%	10.74%	2.14%
IC	3.71%	11.83%	0.44%
KCS	4.30%	12.37%	0.53%
NSC	20.94%	9.45%	1.98%
UPC	27.34%	12.43%	3.40%
COMPOSITE	100.00%		11.53%

Table 12  
Calculation of Nontruncated Growth Rates

Railroad	Average Weight In Composite	Nontruncated Average Growth Rate	Contribution To Nontruncated Average
BNSF	23.84%	12.52%	2.98%
CSX	19.88%	10.61%	2.11%
IC	3.71%	11.64%	0.43%
KCS	4.30%	14.40%	0.62%
NSC	20.94%	9.43%	1.97%
UPC	27.34%	12.26%	3.35%
COMPOSITE	100.00%		11.47%

Table 13  
Computation of the Cost of Common Equity

Dividend Yield	2.11%	
Dividend Yield Times 1+½ Growth Rate	2.11% times 1.05765	2.23%
Growth Rate		11.53%
Cost of Equity		13.76%

Table 14  
Computation of Cost & Market Value of Preferred Stock

Railroad	Div \$	Value Per Share	Div. Yield	Shares (000)	Market Value (000)	Market Weight	Weighted Yield
KCS	\$1.00	\$16.60	6.02%	242.17	4,020	9.3%	0.56%
NSC	2.60	42.41	6.13%	920.20	39,026	90.7%	5.56%
COMPOSITE					\$43,046	100.0%	6.12%

Table 15  
Computation of Capital Structure Mix

Type of Capital	Market Value (000)	Weight
Debt	\$24,339.5	29.67%
Preferred Equity	43.0	0.05%
Common Equity	57,650.5	70.28%
TOTAL	\$82,033	100.00%

Table 16  
Cost of Capital Computation

Type of Capital	Cost (Rounded)	Weight	Weighted Average
Long-Term Debt	7.22%	29.67%	2.142%
Preferred Equity	6.12%	0.05%	0.003%
Common Equity	13.76%	70.28%	9.67%
COMPOSITE COST OF CAPITAL		100.0%	11.82%